Using Stories in Instruction

Please note that this paper is not intended to be a step-by-step guide on crafting and incorporating stories into instruction. Creating effective and engaging learning stories requires creativity, curiosity, and a lot of trial and error.

Rather, the goal of this paper is to provide helpful suggestions and ideas to get you started using stories to supplement traditional online learning experiences. Skill in crafting stories is invaluable in the design of engaging project-based, problem-based, and situated learning experiences that have been demonstrated to promote deep learning (Sawyer, 2014). The research-based justification for using stories to improve student engagement and learning is highlighted in the companion paper (Stories and Learning) so the focus of this paper is entirely on application.

In the Beginning... crafting an effective story for learning

We are continually surrounded by stories in the forms of books, movies, and video games. And while recognizing a good story is easy, creating one is often far more difficult. Where do ideas for a story come from? What are the building blocks of a good story? How do you ensure a story is effective in promoting learning and not just entertaining? We discuss each of these questions in this section.

Getting story ideas

One method for identifying story ideas, suggested in an insightful article by Jonassen and Hernandez-Serrano, is to ask instructors to share stories as a form of cognitive task analysis (2002). Requesting that instructors share stories about their experiences can provide valuable information about the skills and knowledge required to meet learning objectives as well as excellent story ideas.

(2002). Requesting that instructors share stories about their experiences can provide valuable information about the skills and knowledge required to meet learning objectives as well as excellent story ideas. For example, an instructional designer might have an instructor share stories about ways she’s found lesson material applicable in everyday situations, describe interesting characters or events that shaped the history of a topic, or revisit her own efforts to learn the material and use it to solve authentic problems. Ultimately, the goal should be to collect stories that are both interesting and relevant to the domain while uncovering opportunities to teach students the underlying strategies and skills required to learn the content successfully.
Another suggestion for generating story ideas is to think of learning objectives as the answers to a problem. Consider the learning objective, “The student will be able to explain the difference between mean, median, and mode.” Assuming you want to design a story-based activity related to this objective, you might start by trying to think of interesting problems or challenges that knowing this information makes solvable (Bransford, Sherwood, Hasselbring, Kinzer, & Williams, 1990). For instance, can you imagine a scenario (fictional or historical) where knowing the difference between these measures of central tendency would be crucial for avoiding a disastrous outcome? A learning objective is rarely very interesting on its own, but if you can describe a compelling problem to which the objective provides an answer it can often become quite interesting (Willingham, 2009).

Building a storyline
Now that you have an idea for a story, how do you go about developing this idea into a compelling storyline? Numerous resources outlining common story structures and providing helpful guidance on core story elements are available (e.g., Bell, 2004; Druxman, 2007; Haven, 2009). And while a familiarity with the basic building blocks of stories will not guarantee your story will be a good story, as any aspiring writer can attest, knowledge of these elements is crucial for ensuring that your story has a solid foundation.

The graphic below is meant to provide a simple series of questions to get you thinking about the core elements of your story.

### Problem
- What problem does the learning objective provide an answer?
- Why is this problem interesting or important?
- Who are the main characters and what are their motives?

### Action
- What actions were taken to solve the problem?
- What obstacles, dangers, and failures were encountered?
- What unexpected complications arose in pursuit of the goal?

### Impact
- How was the problem ultimately resolved?
- What interesting applications/outcomes resulted?
- What unresolved questions/challenges remain?
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Creating cognitive work

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- Providing students descriptive feedback that encourages them to make inferences about their choices (e.g., in a multimedia simulation) rather than simply telling them whether their decisions were right or wrong
- Employing an interrupted story approach whereby strategic pauses are added to the story to elicit student predictions or recommendations (Metz, Klassen, McMillan, Clough, & Olson, 2007)
- Leaving out critical information to allow learners the opportunity to generate hypotheses or invent solutions to a problem being presented (Klassen, 2010; Schwartz & Martin, 2004)
- Creating a sense of cognitive disequilibrium in students by sharing stories that contradict or conflict with their prior beliefs (Ambrose & Lovett, 2014; D’Mello, Lehman, Pekrun, & Graesser, 2014)
- Having students use their knowledge to suggest strategies or actions that could have been changed to alter the outcome of a story, an activity termed anomalous replotting (Gerrig, 1993)
Three ideas for using stories in instruction

Once you have your learning story outlined, the next question becomes how to use it as an instructional tool. While the potential uses of stories in instruction are limited only by one’s imagination, we discuss three simple ideas to get you started here.

Hook
Also referred to as a “door opener,” these types of stories are meant to provide students “reasons for needing to know” (Metz et al, 2007, p. 3). Story hooks often present an intriguing problem or direct challenge to students’ beliefs. For example, if you are teaching a course on animal ethics you might begin your instruction with an emotionally compelling story that challenges students’ commonsense beliefs that it is OK to eat factory farmed meat but morally wrong to harm puppies (e.g., Norcross, 2004). In this case, the story generates mental discomfort in students as two strongly held beliefs are placed in direct conflict, motivating learners to resolve the apparent contradiction and increasing their engagement with the material. Used effectively, story hooks can be continually referred to throughout the teaching of a topic by prompting students to revisit the story and apply their increasing expertise in developing a deeper understanding of the relevant ideas nested within.

Situated learning activity
Stories can be an effective way to enhance learning activities by providing context and relevance. For example, the story of Moneyball, which describes a small-market baseball team employing statistical techniques to build a competitive roster, could be used in a situated learning activity supplementing instruction on the statistical procedure of linear regression. Using the story of Moneyball as a backdrop, an advanced student might be placed in the position of a data analyst who is required to apply her statistical knowledge in the analysis of real baseball player data to improve a team’s on-field performance. The use of stories in this way has the potential to increase both learner motivation and transfer by making knowledge of the material meaningful and encouraging students to struggle with activities that simulate real-life complexity.

Lesson organizer
Perhaps most ambitiously, a story might be used to provide an overarching organization for the teaching of a topic. For example, one might teach a lesson about Pearl Harbor by presenting the content as a story involving several main characters (the U.S. and Japan) and the distinct goals and challenges each nation faced (the U.S. seeking to maintain control over islands in the South Pacific, and Japan lacking the natural resources to continue its fight with China) that led to the eventual confrontation (Willingham, 2009). Unlike a chronological exposition of facts, using stories in this way encourages an instructional design approach that emphasizes the underlying motives, struggles, and conflicts that precipitated and explained historical events or scientific breakthroughs.
Balancing education and entertainment

One of the primary reasons for using stories to supplement traditional expository instruction is their potential to increase student interest and motivation. And there is certainly evidence to suggest that employing interesting stories can improve learner outcomes (Cordova & Leeper, 1986). Furthermore, learning researchers are increasingly recognizing the importance of emotion and motivation in the design of effective learning activities (Mayer, 2014). However, increasing interest in a lesson through the addition of stories runs the risk of introducing extraneous details that may distract or interfere with learners’ efforts to process instructional content (Clark, Tanner-Smith, & Killingsworth, 2015; Harp & Mayer, 1998). So while a compelling narrative can enhance the motivational qualities of educational content, there must be tight alignment between a story and instructional objectives to ensure student cognitive resources are not overloaded (Fisch, 2000).

Unfortunately, clear guidelines on how to balance emotional interest and cognitive load in the design of learning activities do not exist. As it pertains to the use of stories in instruction, however, some simple suggestions can be offered. A good story should avoid complex or overly embellished storylines that might distract learner attention from the story’s core instructional purpose (Adams, Mayer, MacNamara, Koenig, & Wainess, 2012). The primary function of the story should always be to motivate students to direct their thinking in ways that support relevant instructional objectives (Mayer, 2015). And it is important that learners’ prior knowledge be taken into account to ensure that story content is familiar and easily understood by students. As an instructional designer you should be continually asking yourself, “Is a story likely to enhance student motivation or comprehension of this learning objective and, if so, is each story element I am considering including necessary?” If the answer to either question is no, then it might be wise to leave it out.

Where can I learn more?

For an accessible discussion of the educative value of stories as well as several excellent ideas for incorporating stories into instruction, see the article by Green (2004). The paper by Klassen (2009) provides an interesting discussion of one researcher’s efforts to define a methodology for constructing effective instructional stories using an original story he created for his college class as a case study. For an important theoretical discussion about the elements of an effective instructional story and potential strategies for evaluating story quality, see Norris et al. (2005). Finally, for helpful resources on how to write stories, the books by Druxman (1997) and Bell (2004) provide excellent starting points.
References


